SORENSEN ENVIRONMENTAL, INC.

Water Quality and Waste Management Engineering

1901 Bear Court
Fort Collins, CO 80525
(970) 493-6698
FAX (970) 493-0216

May 5, 2000

Mr. Ed Southwick
Nebraska Department of Environmental Quality
Suite 400, The Atrium
1200 N Street
P.O. Box 98922
Lincoln, NE 68509-8922

Subject: Lockwood Corporation
Compliance Monitoring Report, Fall 1999
RCRA Part B Post-Closure Permit
NDEQ/EPA ID # NED044101442

Dear Mr Southwick:

On behalf of Lockwood Corporation, Sorensen Environmental, Inc. (SEI) is pleased to submit three (3) copies of the referenced Compliance Monitoring Report. This report was prepared and is submitted in accordance with requirements of the Part B Post Closure Permit Application of August 10, 1994 and the RCRA Post Closure Permit issued by the Nebraska Department of Environmental Quality (NDEQ) on December 16, 1994. As required, one (1) copy of the referenced report is being sent to U.S. EPA, Region VII in Kansas City, KS.

SEI conducted groundwater sampling of compliance monitoring wells near the Lockwood closed waste acid impoundment on March 29, 2000. The enclosed report summarizes findings.

If you have any comments or need additional information, please contact me at (970) 493-6698.

Sincerely,

Paul C. Sorensen, P.E.
President

Enclosure

cc: James Mitchell
Ms. JoAnn M. Heiman, U.S. EPA - Region VII

SORENSEN ENVIRONMENTAL, INC.

Water Quality and Waste Management Engineering

POST-CLOSURE CARE COMPLIANCE MONITORING REPORT

NED 044101442

LOCKWOOD CORPORATION

Highway 92 East

Gering, NE

May 5, 2000

LOCKWOOD CORPORATION

Highway 92 East
Gering, NE

POST-CLOSURE CARE
COMPLIANCE MONITORING REPORT

NDEQ/EPA ID # NED044101442

SUBMITTED TO:

NEBRASKA DEPARTMENT OF ENVIRONMENTAL QUALITY

PREPARED BY:

Sorensen Environmental, Inc.
1901 Bear Court
Fort Collins, CO 80525

May 5, 2000

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1.0 INTRODUCTION

As prescribed in the RCRA Part B Post Closure Permit Application of August 10, 1994 and in the Post-Closure Permit (NDEQ/EPA I.D. #: NED044101442) issued by the Nebraska Department of Environmental Quality (NDEQ) on December 16, 1994, Sorensen Environmental, Inc. (SEI) conducted sampling of compliance monitoring wells near the closed waste acid impoundment on the Lockwood facility in Gering, Nebraska on March 29, 2000. On behalf of Mr. James J. Stumpf, Chapter 7 Trustee for Lockwood Corporation, SEI is pleased to submit this summary report of compliance monitoring procedures and analytical data.

2.0 SAMPLING PROCEDURES

Compliance monitoring was performed in accordance with procedures outlined in Section 3.0 of the RCRA Part B Post Closure Permit Application, Sampling and Analysis Plan. As required, initial (pre-sampling) groundwater elevation measurements were made, as well as a determination of total well depth. Post-sampling groundwater elevations were also measured with the use of an electronic water level indicator. In response to the NDEQ Notice of Violation (NOV) of August 8, 1994, well recovery time after purging and sampling was recorded to the nearest half minute with the continuous use of the electronic water level indicator. Corresponding data are provided in Section 3.0.

Groundwater samples were taken from the following compliance monitor wells, in the order presented: MW-8 (background), MW-6, MW-3, MW-7, MW-1, and MW-4. This sampling sequence goes from up- to down-gradient of the closed waste acid impoundment. Field measurements were recorded for pH, specific conductance, and temperature. Each monitor well was purged in excess of three times the casing volume and until consecutive readings of pH, specific conductance, and temperature varied by less than 5 %.

Groundwater samples were collected from each well and submitted to Technology Laboratory, Inc. in Fort Collins, Colorado for analysis of the following parameters:

- Volatile Organic Compounds;
- Total Cadmium;
- Total Lead; and
- Total Silver.

In accordance with NDEQ requirements, a duplicate sample was collected form MW-4 and submitted to the laboratory for metals analysis, a trip blank sample was submitted to the laboratory for metals analysis; and a duplicate sample from MW-1 was submitted for laboratory pH and specific conductivity analysis to confirm field measurements.

3.0 COMPLIANCE MONITORING RESULTS

Table 1 provides pertinent monitor well information, including: top of casing elevation; total well depth (as measured during this sampling event and as previously measured on October 14, 1994 for comparison); depth to groundwater; groundwater surface elevation; casing volume; and purge volumes prior to sampling. Top of casing elevations are as surveyed by Schaff & Associates, Inc. on October 14, 1994, and are Mean Sea Level elevations, minus 3,800 feet. These data are listed in Table 1 and also presented on Figure 1, along with the resulting groundwater potentiometric surface map as measured on March 29, 2000 and the inferred groundwater gradient and flow direction. Consistent with previous compliance monitoring findings, groundwater flow direction is to the northeast.

Groundwater elevations appear to be consistently higher in the fall than in the spring months, and measured groundwater elevations during this sampling event were typical of fall levels. Table 2 provides an account of recorded groundwater elevations measured during compliance monitoring events from October 1994 through March 2000, and Figure 2 provides a graphical display of the seasonal fluctuation in groundwater surface elevation.

The Technology Laboratory, Inc. analytical report and Chain-of-Custody documentation are presented in Appendix A. Laboratory analytical results are summarized in Table 3. As shown, with the exception of tetrachloroethene (PCE) in the up-gradient well MW-6, analytical results for volatile organic compounds (VOCs), total cadmium, total lead, and total silver indicate that none of these compounds or elements is found in concentrations greater than the analytical detection limit in any of the other wells.

Compliance monitor well MW-6 is located up-gradient of the closed waste acid impoundment, but down-gradient of well MW-8 and the railroad tracks that run adjacent to the closed waste impoundment on the west side. PCE was reported in MW-6 in the concentration of 1.1 μg/L, well below the groundwater protection standard of 5 μg/L. Because MW-6 is located up-gradient of the closed waste impoundment, it is unlikely that the closed waste impoundment on the Lockwood property is the source of the detected PCE. SEI initially questioned the laboratory regarding analytical procedures or quality control requirements. Technology Laboratory was also surprised by this result, and conducted additional tests that confirmed the accuracy of the reported 1.1 μg/L concentration.

It was reported that the railroad frequently conducts maintenance and repair work on engines and cars on the siding track that is adjacent to the west (up-gradient) side of the closed waste acid impoundment (telephone conversation, Mr. Joe Shon, Agromac International, April 17, 2000). It is possible that railroad maintenance activities could be responsible for the PCE detected there. However, no conclusive evidence of a solvent release or spill was observed during sampling activities.

Review of the laboratory report (Appendix A) indicates that all other parameters are reported at concentrations less than the detection limit for all other monitor wells. The non-detect analytical results are consistent with those of previous monitoring results as reported in the Part B Post-Closure Permit Application submitted (with revisions) by Lockwood on August 10, 1994 and Post-Closure Care Compliance Monitoring Reports from November 1994 through May 1997. Trichloroethene (TCE) was measured at 1.2 micrograms per Liter (μg/L) in MW-4 in the sample collected on October 16, 1997 and tetrachloroethene (PCE) was measured at 1.1 μg/L in MW-6 in the sample collected on April 2, 1998. While these results were above the non-detectable level, they remain well below the designated Groundwater Protection Standard of 5.0 μg/L. Analytical results for all subsequent sampling events were once again reported at non-detect for all parameters analyzed.

In the NDEQ Notice of Violation (NOV) letter of August 8, 1994, NDEQ requested that Lockwood perform monthly well head inspections, annual well bore scrape sampling, and annual review of well yield, recovery time, and fill depth. Lockwood understands that these requests were made to demonstrate the proper functioning of the monitor wells. In response to that NDEQ comment, it was agreed that groundwater recovery times would be recorded to the nearest 30 seconds with the continuous use of an electronic water level indicator. Moreover, Lockwood agreed to perform the requested well services "in the event that both of the following conditions are encountered in any given compliance monitoring well:

- Failure to produce visually clear sample water after purging of five (5) casing volumes; and

- Post-purging water surface depression below the initial water surface level in excess of 0.25 feet after a recovery period of not greater than 15 minutes (Lockwood response to NDEQ NOV, August 30, 1994)."

NDEQ agreed that very rapid groundwater recovery rates have been demonstrated during compliance monitoring events. It was therefore further agreed that recording of groundwater recovery in 30 second increments was necessary only once a year. Accordingly, SEI measured groundwater recovery rates in all compliance monitoring wells during this sampling event. Table 4 presents groundwater recovery data. As demonstrated by the purge volumes necessary to produce visually clear water prior to sampling (Table 1) and by the recorded post-sampling depths to groundwater given in Table 4, neither of the above conditions was encountered, indicating acceptable conditions within each of the monitor wells. Water level measurements show consistently minimal changes in post-sampling from pre-sampling water levels, and the recorded differences are within the margin of error for the electronic water level indicator used.

4.0 STATISTICAL ANALYSIS

Analytical values for the parameters sampled from each compliance monitor well are reported as less than the detection limit for all parameters from all compliance monitoring wells except VOC in MW-6 (Table 2). PCE was measured at 1.1 μg/L in MW-6. All other well values are reported at less than the detection limit. Accordingly, with the exception of VOC in MW-6, these data have identical mean values (all less than detection limit) and variance values of zero. The occurrence of one non-zero value (PCE in MW-6) with all other values being zero does not lend itself to meaningful statistical evaluation. The critical assumption that the variance be equal in all wells for the Analysis of Variance test is violated (variance equal to zero in all wells except MW-6). Therefore, no statistical analysis (analysis of variance) is appropriate for these data.

5.0 CONCLUSIONS

This report presents findings of the March 29, 2000 compliance monitoring event at the Lockwood closed waste acid impoundment in accordance with requirements of the Part B Permit Application of August 10, 1994 and the Part B Post Closure Permit (NED044101442) issued by the NDEQ on December 16, 1994. The data show that none of the constituents of concern was detected in concentrations greater than the groundwater protection standards in any of the compliance wells sampled; all parameters evaluated (except PCE in MW-6) are reported at concentrations less than detection limit.

Laboratory analytical results indicate that PCE was detected in MW-6 at the very low level of 1.1 μg/L in the MW-6. This low level, while above the detection limit, remains well below the groundwater protection standard of 5.0μg/L. This analytical result is not indicative of a new release from the waste acid impoundment, and does not indicate the presence of a continual source that could lead to PCE concentration exceeding the groundwater protection standard. On-going compliance monitoring at this closed waste acid impoundment has demonstrated the continued compliance with groundwater protection standards over a period of six years.

Table 1
Monitor Well and Groundwater Sampling Information

Monitor Well No.	Top of Casing Elevation[1] (ft-AMSL)	Total Well Depth Measured on 3/29/00 (ft below TOC[2])	Total Well Depth Measured on 10/14/94 (ft below TOC[2])	Depth to Groundwater Measured on 3/29/00 (ft below TOC[2])	Groundwater Elevation[1] (ft-AMSL)	Well Casing Volume (gal)	Purge Volume prior to sampling (gal)
MW-8	81.47	29.40	29.59	10.39	71.08	12.36	40
MW-6	80.73	29.28	29.56	9.76	70.97	12.69	40
MW-3	81.00	28.35	28.55	10.24	70.76	11.77	40
MW-7	80.51	28.10	28.31	10.23	70.28	11.62	35
MW-1	80.14	24.60	24.82	9.70	70.44	9.69	30
MW-4	80.23	27.30	27.53	10.12	70.11	11.17	35

[1] Adjusted Mean Seal Level Elevation: MSL - 3,800 ft
[2] TOC = Top of Casing

Table 2
Summary of Measured Water Surface Elevations
During Compliance Monitoring Period October 1994 through March 2000

Monitor Well No.	Measured Groundwater Surface Elevation (AMSL) [1]											
	10/14/94	3/24/95	10/27/95	4/19/96	10/24/96	3/26/97	10/16/97	4/2/98	9/24/98	3/31/99	10/21/99	3/29/00
MW-8	72.33	71.01	71.88	70.59	72.39	70.83	72.87	71.21	73.43	71.29	72.67	71.08
MW-6	72.18	70.83	71.76	70.47	72.24	70.74	72.81	71.23	73.40	71.21	72.57	70.97
MW-3	71.94	70.68	71.51	70.28	72.09	70.52	72.38	70.90	73.19	70.97	72.53	70.76
MW-7	71.63	70.22	71.18	69.81	71.65	70.09	72.18	70.35	72.76	70.46	71.93	70.28
MW-1	71.67	70.32	71.20	69.92	71.76	70.19	72.16	70.49	72.75	70.62	72.09	70.44
MW-4	71.37	70.03	70.96	69.59	71.45	69.88	71.96	70.21	72.49	70.27	71.81	70.11

[1] Adjusted Mean Seal Level Elevation = Mean Seal Level (MSL) - 3,800 ft

Table 3
Summary of Compliance Monitoring Analytical Results

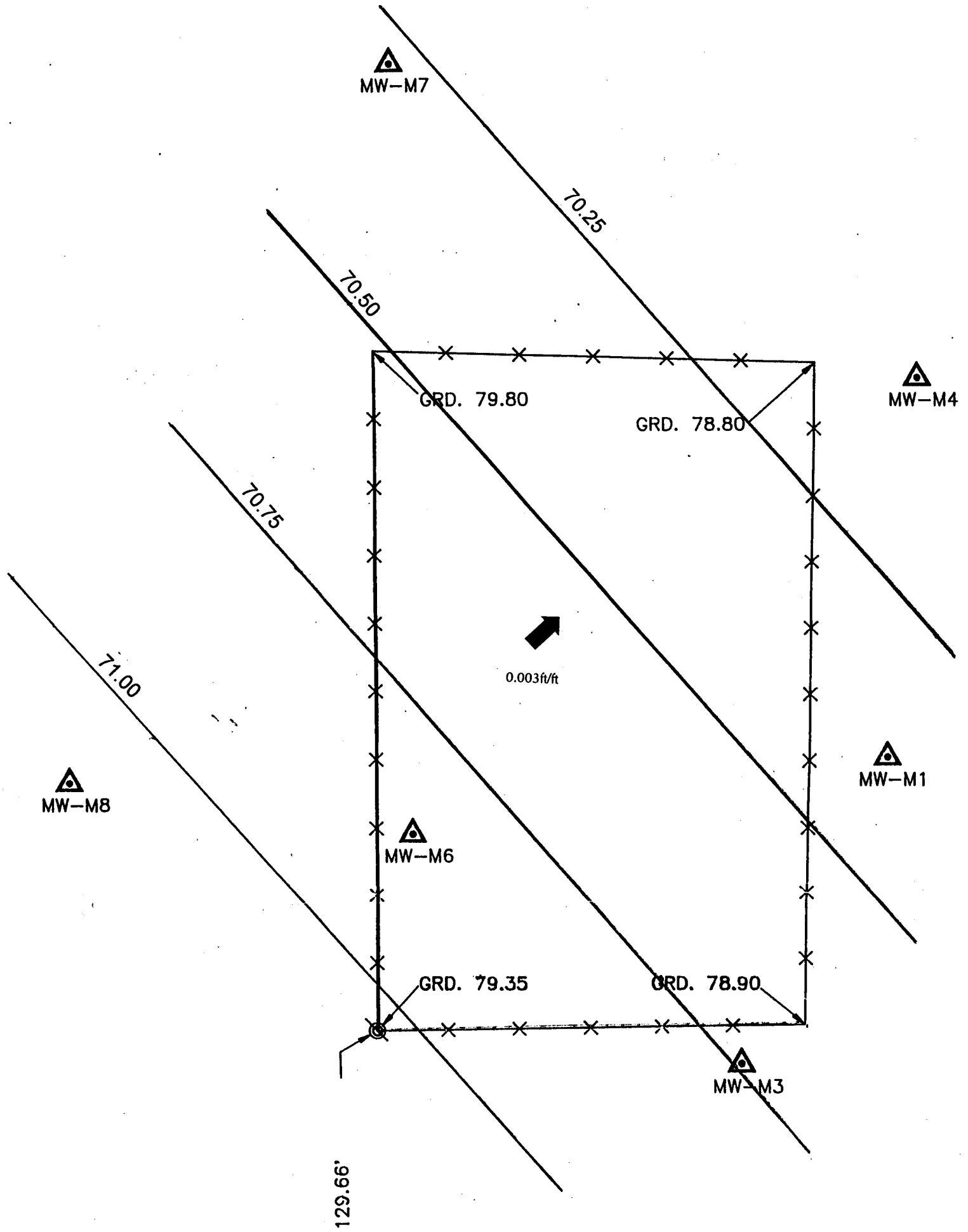
Monitor Well No.	Date Sampled	pH[1]	Specific Conductance[1] (umhos/cm)	Temperature[1] (°F)	VOCs[2] (μg/L)	Total Cadmium (mg/L)	Total Lead (mg/L)	Total Silver (mg/L)
Groundwater Protection Standard					TCE: 5.0 PCE: 5.0	0.005	0.015	0.05
MW-8	3/29/00	7.28	1386	49.8	<0.5	<0.005	<0.003	<0.01
MW-6	3/29/00	7.40	1362	49.8	PCE 1.1	<0.005	<0.003	<0.01
MW-3	3/29/00	7.34	1317	49.9	<0.5	<0.005	<0.003	<0.01
MW-7	3/29/00	7.54	1347	49.9	<0.5	<0.005	<0.003	<0.01
MW-1	3/29/00	7.01	2230	47.3	<0.5	<0.005	<0.003	<0.01
MW-4	3/29/00	6.87	3600	49.9	<0.5	<0.005	<0.003	<0.01
Trip Blank	3/29/00	NA[3]	NA[3]	NA[3]	NA[3]	<0.005	<0.003	<0.01
MW-1-d	3/29/00	6.93[4]	430[4]	NA[3]	NA[3]	NA[3]	NA[3]	NA[3]
MW-4-d	3/29/00	NA[3]	NA[3]	NA[3]	NA[3]	<0.005	<0.003	<0.01

[1] Field Measurements
[2] Volatile Organic Compounds
[3] Not Analyzed
[4] Laboratory Analysis

Table 4
Groundwater Recovery Data[1]

Monitor Well No.	Pre-Sample Water Depth (ft below TOC)	Elapsed Time[2] (sec)	Post-Sample Water Depth (ft below TOC)
MW-8	10.39	210	10.44
		240	10.43
		270	10.43
MW-6	9.76	150	9.88
		180	9.86
		210	9.85
		240	9.85
		270	9.85
MW-3	10.24	150	10.32
		180	10.32
		210	10.32
		240	10.31
		270	10.31
MW-7	10.23	210	10.24
		240	10.23
MW-1	9.70	150	9.71
		180	9.70
MW-4	10.12	150	10.15
		180	10.15
		210	10.14
		240	10.14

[1] Data as measured on March 29, 2000
[2] Elapsed Time from beginning of sampling



KEY

▲ MONITORING WELL

⊗ EXISTING SPIKE

WELL #	GROUND ELEVATION (FT-AMSL)[1]	TOP OF CASING ELEVATION (FT-AMSL)	DEPTH TO GROUNDWATER (FT ABOVE TOP OF CASING)	GROUNDWATER ELEVATION (FT-AMSL)
MW-M1	78.40	80.14	9.70	70.44
MW-M3	79.30	81.00	10.24	70.76
MW-M4	78.72	80.23	10.12	70.11
MW-M6	79.00	80.73	9.76	70.97
MW-M7	78.90	80.51	10.23	70.28
MW-M8	79.80	81.47	10.39	71.08

1. Adjusted Mean Sea Level Elevation: MSL - 3,800 feet

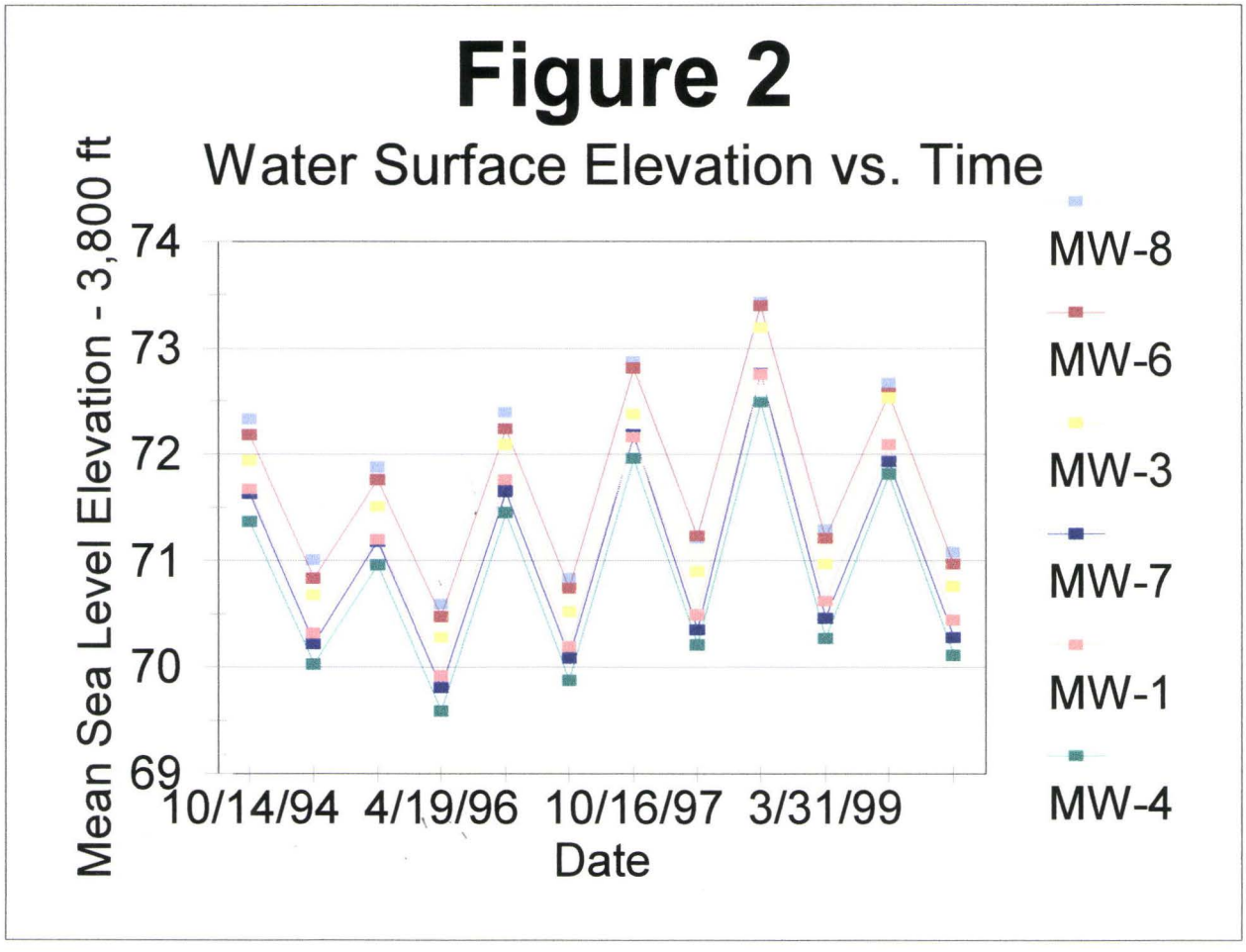
FIGURE 1
GROUNDWATER POTENTIOMETRIC SURFACE
AS MEASURED ON MARCH 29, 2000
CLOSED WASTE ACID EVAPORATION POND

M. C. SCHAFF & ASSOCIATES, INC.
818 SOUTH BELTLINE HWY. EAST
SCOTTSBLUFF, NEBRASKA

Project: MONITORING WELL LOCATIONS
AND ELEVATIONS
LOCKWOOD CORPORATION
GERING, NEBRASKA 69341

Date: OCTOBER 20, 1994 Drn: J.H.
Job No.: # Chk: K.B.
Scale: 1" = 50' Rev: By:

Figure 2


Water Surface Elevation vs. Time
Mean Sea Level Elevation - 3,800 ft
74
73
72
71
70
69
10/14/94
4/19/96
10/16/97
3/31/99
Date
MW-8
MW-6
MW-3
MW-7
MW-1
MW-4

APPENDIX A

TECHNOLOGY LABORATORY, INC.

WATER ANALYSIS REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION

TECHNOLOGY LABORATORY, INC.

CENTRE OFFICE PARK
1012 Centre Avenue
Fort Collins, Colorado 80526
(970) 490-1414

VOLATILE ORGANICS
WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 03/29/00
Received: 03/31/00
Analyzed: 04/07/00

Sample ID: M8
Laboratory ID: 404-1

Project No.: H008-01-002/S00
Method: EPA-8260

CAS Number	Compound Analyzed	Concentration (µg/L)	CAS Number	Compound Analyzed	Concentration (µg/L)
75-01-4	Vinyl chloride	<0.5	106-93-4	1,2-Dibromoethane	<0.5
74-87-3	Chloromethane	<0.5	124-48-1	Dibromochloromethane	<0.5
74-83-9	Bromomethane	<0.5	108-90-7	Chlorobenzene	<0.5
75-00-3	Chloroethane	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	100-41-4	Ethylbenzene	<0.5
75-35-4	1,1-Dichloroethene	<0.5		Total Xylenes	<0.5
156-60-5	trans-1,2-Dichloroethene	<0.5	100-42-5	Styrene	<0.5
156-59-2	cis-1,2-Dichloroethene	<0.5	75-25-2	Bromoform	<0.5
75-09-2	Methylene chloride	<0.5	79-34-5	1,1,2,2-Tetrachloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	98-82-8	Isopropylbenzene	<0.5
74-97-5	Bromochloromethane	<0.5	108-86-1	Bromobenzene	<0.5
67-66-3	Chloroform	<0.5	95-49-8	2-Chlorotoluene	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	106-43-4	4-Chlorotoluene	<0.5
56-23-5	Carbon tetrachloride	<0.5	108-67-8	1,3,5-Trimethylbenzene	<0.5
71-43-2	Benzene	<0.5	95-63-6	1,2,4-Trimethylbenzene	<0.5
107-06-2	1,2-Dichloroethane	<0.5	98-06-6	tert-Butylbenzene	<0.5
79-01-6	Trichloroethene	<0.5	135-98-8	sec-Butylbenzene	<0.5
78-87-5	1,2-Dichloropropane	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
75-27-4	Bromodichloromethane	<0.5	541-73-1	1,3-Dichlorobenzene	<0.5
74-95-3	Dibromomethane	<0.5	99-87-6	4-Isopropyltoluene	<0.5
108-88-3	Toluene	<0.5	104-51-8	n-Butylbenzene	<0.5
79-00-5	1,1,2-Trichloroethane	<0.5	87-61-6	1,2,3-Trichlorobenzene	<0.5
142-28-9	1,3-Dichloropropane	<0.5	120-82-1	1,2,4-Trichlorobenzene	<0.5
594-20-7	2,2-Dichloropropane	<0.5	87-68-3	Hexachlorobutadiene	<0.5
563-58-6	1,1-Dichloropropene	<0.5	91-20-3	Naphthalene	<0.5
542-75-6	cis-1,3-Dichloropropene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
542-75-6	trans-1,3-Dichloropropene	<0.5	103-65-1	N-Propylbenzene	<0.5
127-18-4	Tetrachloroethene	<0.5			

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
Dibromofluoromethane	103	86-118
Toluene-d_8	95	88-110
4-Bromofluorobenzene	99	86-115

TECHNOLOGY LABORATORY, INC.

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CENTRE OFFICE PARK
1012 Centre Avenue
Fort Collins, Colorado 80526
(970) 490-1414

VOLATILE ORGANICS
WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 03/29/00
Received: 03/31/00
Analyzed: 04/07/00

Sample ID: M6
Laboratory ID: 404-2

Project No.: H008-01-002/S00
Method: EPA-8260

CAS Number	Compound Analyzed	Concentration (µg/L)	CAS Number	Compound Analyzed	Concentration (µg/L)
75-01-4	Vinyl chloride	<0.5	106-93-4	1,2-Dibromoethane	<0.5
74-87-3	Chloromethane	<0.5	124-48-1	Dibromochloromethane	<0.5
74-83-9	Bromomethane	<0.5	108-90-7	Chlorobenzene	<0.5
75-00-3	Chloroethane	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	100-41-4	Ethylbenzene	<0.5
75-35-4	1,1-Dichloroethene	<0.5		Total Xylenes	<0.5
156-60-5	trans-1,2-Dichloroethene	<0.5	100-42-5	Styrene	<0.5
156-59-2	cis-1,2-Dichloroethene	<0.5	75-25-2	Bromoform	<0.5
75-09-2	Methylene chloride	<0.5	79-34-5	1,1,2,2-Tetrachloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	98-82-8	Isopropylbenzene	<0.5
74-97-5	Bromochloromethane	<0.5	108-86-1	Bromobenzene	<0.5
67-66-3	Chloroform	<0.5	95-49-8	2-Chlorotoluene	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	106-43-4	4-Chlorotoluene	<0.5
56-23-5	Carbon tetrachloride	<0.5	108-67-8	1,3,5-Trimethylbenzene	<0.5
71-43-2	Benzene	<0.5	95-63-6	1,2,4-Trimethylbenzene	<0.5
107-06-2	1,2-Dichloroethane	<0.5	98-06-6	tert-Butylbenzene	<0.5
79-01-6	Trichloroethene	<0.5	135-98-8	sec-Butylbenzene	<0.5
78-87-5	1,2-Dichloropropane	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
75-27-4	Bromodichloromethane	<0.5	541-73-1	1,3-Dichlorobenzene	<0.5
74-95-3	Dibromomethane	<0.5	99-87-6	4-Isopropyltoluene	<0.5
108-88-3	Toluene	<0.5	104-51-8	n-Butylbenzene	<0.5
79-00-5	1,1,2-Trichloroethane	<0.5	87-61-6	1,2,3-Trichlorobenzene	<0.5
142-28-9	1,3-Dichloropropane	<0.5	120-82-1	1,2,4-Trichlorobenzene	<0.5
594-20-7	2,2-Dichloropropane	<0.5	87-68-3	Hexachlorobutadiene	<0.5
563-58-6	1,1-Dichloropropene	<0.5	91-20-3	Naphthalene	<0.5
542-75-6	cis-1,3-Dichloropropene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
542-75-6	trans-1,3-Dichloropropene	<0.5	103-65-1	N-Propylbenzene	<0.5
127-18-4	Tetrachloroethene	1.1			

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
Dibromofluoromethane	103	86-118
Toluene-d_8	96	88-110
4-Bromofluorobenzene	100	86-115

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WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 03/29/00
Received: 03/31/00
Analyzed: 04/07/00

Sample ID: M3
Laboratory ID: 404-3

Project No.: H008-01-002/S00
Method: EPA-8260

CAS Number	Compound Analyzed	Concentration (µg/L)	CAS Number	Compound Analyzed	Concentration (µg/L)
75-01-4	Vinyl chloride	<0.5	106-93-4	1,2-Dibromoethane	<0.5
74-87-3	Chloromethane	<0.5	124-48-1	Dibromochloromethane	<0.5
74-83-9	Bromomethane	<0.5	108-90-7	Chlorobenzene	<0.5
75-00-3	Chloroethane	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	100-41-4	Ethylbenzene	<0.5
75-35-4	1,1-Dichloroethene	<0.5		Total Xylenes	<0.5
156-60-5	trans-1,2-Dichloroethene	<0.5	100-42-5	Styrene	<0.5
156-59-2	cis-1,2-Dichloroethene	<0.5	75-25-2	Bromoform	<0.5
75-09-2	Methylene chloride	<0.5	79-34-5	1,1,2,2-Tetrachloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	98-82-8	Isopropylbenzene	<0.5
74-97-5	Bromochloromethane	<0.5	108-86-1	Bromobenzene	<0.5
67-66-3	Chloroform	<0.5	95-49-8	2-Chlorotoluene	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	106-43-4	4-Chlorotoluene	<0.5
56-23-5	Carbon tetrachloride	<0.5	108-67-8	1,3,5-Trimethylbenzene	<0.5
71-43-2	Benzene	<0.5	95-63-6	1,2,4-Trimethylbenzene	<0.5
107-06-2	1,2-Dichloroethane	<0.5	98-06-6	tert-Butylbenzene	<0.5
79-01-6	Trichloroethene	<0.5	135-98-8	sec-Butylbenzene	<0.5
78-87-5	1,2-Dichloropropane	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
75-27-4	Bromodichloromethane	<0.5	541-73-1	1,3-Dichlorobenzene	<0.5
74-95-3	Dibromomethane	<0.5	99-87-6	4-Isopropyltoluene	<0.5
108-88-3	Toluene	<0.5	104-51-8	n-Butylbenzene	<0.5
79-00-5	1,1,2-Trichloroethane	<0.5	87-61-6	1,2,3-Trichlorobenzene	<0.5
142-28-9	1,3-Dichloropropane	<0.5	120-82-1	1,2,4-Trichlorobenzene	<0.5
594-20-7	2,2-Dichloropropane	<0.5	87-68-3	Hexachlorobutadiene	<0.5
563-58-6	1,1-Dichloropropene	<0.5	91-20-3	Naphthalene	<0.5
542-75-6	cis-1,3-Dichloropropene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
542-75-6	trans-1,3-Dichloropropene	<0.5	103-65-1	N-Propylbenzene	<0.5
127-18-4	Tetrachloroethene	<0.5			

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
Dibromofluoromethane	103	86-118
Toluene-d_8	96	88-110
4-Bromofluorobenzene	101	86-115

Bri Bates

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CENTRE OFFICE PARK
1012 Centre Avenue
Fort Collins, Colorado 80526
(970) 490-1414

VOLATILE ORGANICS
WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 03/29/00
Received: 03/31/00
Analyzed: 04/07/00

Sample ID: M7
Laboratory ID: 404-4

Project No.: H008-01-002/S00
Method: EPA-8260

CAS Number	Compound Analyzed	Concentration (µg/L)	CAS Number	Compound Analyzed	Concentration (µg/L)
75-01-4	Vinyl chloride	<0.5	106-93-4	1,2-Dibromoethane	<0.5
74-87-3	Chloromethane	<0.5	124-48-1	Dibromochloromethane	<0.5
74-83-9	Bromomethane	<0.5	108-90-7	Chlorobenzene	<0.5
75-00-3	Chloroethane	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	100-41-4	Ethylbenzene	<0.5
75-35-4	1,1-Dichloroethene	<0.5		Total Xylenes	<0.5
156-60-5	trans-1,2-Dichloroethene	<0.5	100-42-5	Styrene	<0.5
156-59-2	cis-1,2-Dichloroethene	<0.5	75-25-2	Bromoform	<0.5
75-09-2	Methylene chloride	<0.5	79-34-5	1,1,2,2-Tetrachloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	98-82-8	Isopropylbenzene	<0.5
74-97-5	Bromochloromethane	<0.5	108-86-1	Bromobenzene	<0.5
67-66-3	Chloroform	<0.5	95-49-8	2-Chlorotoluene	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	106-43-4	4-Chlorotoluene	<0.5
56-23-5	Carbon tetrachloride	<0.5	108-67-8	1,3,5-Trimethylbenzene	<0.5
71-43-2	Benzene	<0.5	95-63-6	1,2,4-Trimethylbenzene	<0.5
107-06-2	1,2-Dichloroethane	<0.5	98-06-6	tert-Butylbenzene	<0.5
79-01-6	Trichloroethene	<0.5	135-98-8	sec-Butylbenzene	<0.5
78-87-5	1,2-Dichloropropane	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
75-27-4	Bromodichloromethane	<0.5	541-73-1	1,3-Dichlorobenzene	<0.5
74-95-3	Dibromomethane	<0.5	99-87-6	4-Isopropyltoluene	<0.5
108-88-3	Toluene	<0.5	104-51-8	n-Butylbenzene	<0.5
79-00-5	1,1,2-Trichloroethane	<0.5	87-61-6	1,2,3-Trichlorobenzene	<0.5
142-28-9	1,3-Dichloropropane	<0.5	120-82-1	1,2,4-Trichlorobenzene	<0.5
594-20-7	2,2-Dichloropropane	<0.5	87-68-3	Hexachlorobutadiene	<0.5
563-58-6	1,1-Dichloropropene	<0.5	91-20-3	Naphthalene	<0.5
542-75-6	cis-1,3-Dichloropropene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
542-75-6	trans-1,3-Dichloropropene	<0.5	103-65-1	N-Propylbenzene	<0.5
127-18-4	Tetrachloroethene	<0.5			

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
Dibromofluoromethane	104	86-118
Toluene-d_8	96	88-110
4-Bromofluorobenzene	99	86-115

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VOLATILE ORGANICS
WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 03/29/00
Received: 03/31/00
Analyzed: 04/07/00

Sample ID: M1
Laboratory ID: 404-5

Project No.: H008-01-002/S00
Method: EPA-8260

CAS Number	Compound Analyzed	Concentration (µg/L)	CAS Number	Compound Analyzed	Concentration (µg/L)
75-01-4	Vinyl chloride	<0.5	106-93-4	1,2-Dibromoethane	<0.5
74-87-3	Chloromethane	<0.5	124-48-1	Dibromochloromethane	<0.5
74-83-9	Bromomethane	<0.5	108-90-7	Chlorobenzene	<0.5
75-00-3	Chloroethane	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	100-41-4	Ethylbenzene	<0.5
75-35-4	1,1-Dichloroethene	<0.5		Total Xylenes	<0.5
156-60-5	trans-1,2-Dichloroethene	<0.5	100-42-5	Styrene	<0.5
156-59-2	cis-1,2-Dichloroethene	<0.5	75-25-2	Bromoform	<0.5
75-09-2	Methylene chloride	<0.5	79-34-5	1,1,2,2-Tetrachloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	98-82-8	Isopropylbenzene	<0.5
74-97-5	Bromochloromethane	<0.5	108-86-1	Bromobenzene	<0.5
67-66-3	Chloroform	<0.5	95-49-8	2-Chlorotoluene	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	106-43-4	4-Chlorotoluene	<0.5
56-23-5	Carbon tetrachloride	<0.5	108-67-8	1,3,5-Trimethylbenzene	<0.5
71-43-2	Benzene	<0.5	95-63-6	1,2,4-Trimethylbenzene	<0.5
107-06-2	1,2-Dichloroethane	<0.5	98-06-6	tert-Butylbenzene	<0.5
79-01-6	Trichloroethene	<0.5	135-98-8	sec-Butylbenzene	<0.5
78-87-5	1,2-Dichloropropane	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
75-27-4	Bromodichloromethane	<0.5	541-73-1	1,3-Dichlorobenzene	<0.5
74-95-3	Dibromomethane	<0.5	99-87-6	4-Isopropyltoluene	<0.5
108-88-3	Toluene	<0.5	104-51-8	n-Butylbenzene	<0.5
79-00-5	1,1,2-Trichloroethane	<0.5	87-61-6	1,2,3-Trichlorobenzene	<0.5
142-28-9	1,3-Dichloropropane	<0.5	120-82-1	1,2,4-Trichlorobenzene	<0.5
594-20-7	2,2-Dichloropropane	<0.5	87-68-3	Hexachlorobutadiene	<0.5
563-58-6	1,1-Dichloropropene	<0.5	91-20-3	Naphthalene	<0.5
542-75-6	cis-1,3-Dichloropropene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
542-75-6	trans-1,3-Dichloropropene	<0.5	103-65-1	N-Propylbenzene	<0.5
127-18-4	Tetrachloroethene	<0.5			

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
Dibromofluoromethane	103	86-118
Toluene-d_8	96	88-110
4-Bromofluorobenzene	99	86-115

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VOLATILE ORGANICS
WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sampled: 03/29/00
Received: 03/31/00
Analyzed: 04/07/00

Sample ID: M4
Laboratory ID: 404-7

Project No.: H008-01-002/S00
Method: EPA-8260

CAS Number	Compound Analyzed	Concentration (µg/L)	CAS Number	Compound Analyzed	Concentration (µg/L)
75-01-4	Vinyl chloride	<0.5	106-93-4	1,2-Dibromoethane	<0.5
74-87-3	Chloromethane	<0.5	124-48-1	Dibromochloromethane	<0.5
74-83-9	Bromomethane	<0.5	108-90-7	Chlorobenzene	<0.5
75-00-3	Chloroethane	<0.5	630-20-6	1,1,1,2-Tetrachloroethane	<0.5
75-69-4	Trichlorofluoromethane	<0.5	100-41-4	Ethylbenzene	<0.5
75-35-4	1,1-Dichloroethene	<0.5		Total Xylenes	<0.5
156-60-5	trans-1,2-Dichloroethene	<0.5	100-42-5	Styrene	<0.5
156-59-2	cis-1,2-Dichloroethene	<0.5	75-25-2	Bromoform	<0.5
75-09-2	Methylene chloride	<0.5	79-34-5	1,1,2,2-Tetrachloroethane	<0.5
75-34-3	1,1-Dichloroethane	<0.5	98-82-8	Isopropylbenzene	<0.5
74-97-5	Bromochloromethane	<0.5	108-86-1	Bromobenzene	<0.5
67-66-3	Chloroform	<0.5	95-49-8	2-Chlorotoluene	<0.5
71-55-6	1,1,1-Trichloroethane	<0.5	106-43-4	4-Chlorotoluene	<0.5
56-23-5	Carbon tetrachloride	<0.5	108-67-8	1,3,5-Trimethylbenzene	<0.5
71-43-2	Benzene	<0.5	95-63-6	1,2,4-Trimethylbenzene	<0.5
107-06-2	1,2-Dichloroethane	<0.5	98-06-6	tert-Butylbenzene	<0.5
79-01-6	Trichloroethene	<0.5	135-98-8	sec-Butylbenzene	<0.5
78-87-5	1,2-Dichloropropane	<0.5	106-46-7	1,4-Dichlorobenzene	<0.5
75-27-4	Bromodichloromethane	<0.5	541-73-1	1,3-Dichlorobenzene	<0.5
74-95-3	Dibromomethane	<0.5	99-87-6	4-Isopropyltoluene	<0.5
108-88-3	Toluene	<0.5	104-51-8	n-Butylbenzene	<0.5
79-00-5	1,1,2-Trichloroethane	<0.5	87-61-6	1,2,3-Trichlorobenzene	<0.5
142-28-9	1,3-Dichloropropane	<0.5	120-82-1	1,2,4-Trichlorobenzene	<0.5
594-20-7	2,2-Dichloropropane	<0.5	87-68-3	Hexachlorobutadiene	<0.5
563-58-6	1,1-Dichloropropene	<0.5	91-20-3	Naphthalene	<0.5
542-75-6	cis-1,3-Dichloropropene	<0.5	95-50-1	1,2-Dichlorobenzene	<0.5
542-75-6	trans-1,3-Dichloropropene	<0.5	103-65-1	N-Propylbenzene	<0.5
127-18-4	Tetrachloroethene	<0.5			

QA/QC SURROGATE RECOVERIES

Compound	% Recovery	% Rec. Limits
Dibromofluoromethane	103	86-118
Toluene-d_8	95	88-110
4-Bromofluorobenzene	100	86-115

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TRACE METALS
WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Date Received: 03/31/00
Date Analyzed: 04/06/00
Project No.: H008-01-002/S00

Lab ID	Sample ID	Date Sampled	Total Cadmium mg/L	Total Silver mg/L	Total Lead mg/L
404-1	M8	03/29/00	<0.005	<0.01	<0.003
404-2	M9	03/29/00	<0.005	<0.01	<0.003
404-3	M3	03/29/00	<0.005	<0.01	<0.003
404-4	M7	03/29/00	<0.005	<0.01	<0.003
404-5	M1	03/29/00	<0.005	<0.01	<0.003
404-7	M4	03/29/00	<0.005	<0.01	<0.003
404-8	M4-D	03/29/00	<0.005	<0.01	<0.003
407-9	Trip Blank	03/29/00	<0.005	<0.01	<0.003

Total Cadmium Method: EPA-7130
Total Silver Method: EPA-7760
Total Lead Method: EPA-7421

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Fort Collins, Colorado 80526
(970) 490-1414

WATER ANALYSIS REPORT

SORENSEN ENVIRONMENTAL
1901 Bear Court
Fort Collins, Colorado 80525

Sample ID: M1-D

Laboratory ID: 404-1

Sampled: 03/29/00
Received: 03/31/00
Analyzed: 04/07/00

Project No.: H008-01-002/S00

Compound Analyzed	Concentration	Method
pH	6.93 Units	EPA-150.1
Specific Conductivity	430 µmhos/cm @ 25° C	EPA-120.1

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1012 CENTRE AVENUE
FORT COLLINS, CO 80526
(970) 490-1414

CHAIN-OF-CUSTODY REPORT

COMPANY NAME: SORENSEN ENVIRONMENTAL, INC
PROJECT MANAGER: PAUL SORENSEN
PROJECT NUMBER: H008-01-002/500
PROJECT LOCATION OR NAME: LOCKWOOD/AGRUMAC ; GERING, NE
SAMPLERS SIGNATURE: Paul Sorensen / Douglas R. Hanson

SAMPLE ID	DATE/TIME SAMPLED	SAMPLE MATRIX: SOIL (S) AIR (A) AQUEOUS (W) OTHER (O)	NUMBER OF CONTAINERS	ANALYSIS REQUESTED: BTEX (8020) TVPH (MOD. 8015)	MTBE	TEPH (MOD. 8015)	PAH	TRPH (418.1)	OIL & GREASE	VOL 8260 / 624	SEMI-VOL 8270 / 625	PCB/PEST 8080	TCLP VOL	Ph	TSS	RCRA 8 METAL TCLP / TOTAL	LEAD TCLP / TOTAL / POT. DIS.	PAINT FILTER	REACTIVITY / IGNIT. / CORR.	TO-1, TVPH	TO-14, TVPH	OTHER: TPb (0.005 mg/L); TAG (.01); TCd (0.005 mg/L)	pH, Spec. Cond.
M8	3/29/00 08:44	W	3							X												X	
M6	" 09:28	W	3							X												X	
M3	" 10:15	W	3							X												X	
M7	" 10:57	W	3							X												X	
M1	" 11:39	W	3							X												X	
M1-d	" 11:40	W	1																				X
M4	" 13:48	W	3							X												X	
M4-d	" 13:49	W	1																			X	
Trip Blank	" 13:50	W	1																			X	

PAGE 1 OF 1

TURNAROUND TIME

- [X] NORMAL
- [ ] RUSH
- [ ] OTHER

GENERAL COMMENTS: METHODS & DET. LIM. : VOC : 8260, 0.5 mg/L
TPb ; 7420, 0.003 mg/L // TAG ; 7760, 0.01 mg/L // TCd ; 7130, 0.005 mg/L

RELINQUISHED BY: Paul Sorensen	DATE: 3.31.00	RECEIVED BY: Betty Jaimes	
COMPANY: SET	DATE: 8:40	COMPANY: FCI	
RELINQUISHED BY:	DATE:	RECEIVED BY:	
COMPANY:	DATE:	COMPANY:	